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CLAIMS

1. Use of a therapeutically active and physiologically acceptable derivative of prostaglandin PGA, PGB, PGD, PGE or PGF, in which the omega chain has the formula:

$$\underset{C}{(13)} \quad \underset{B}{} \quad \underset{C}{(14)} \quad - \quad \underset{D}{(15\text{-}24)} \quad - \quad R_2$$

wherein

C is a carbon atom (the number is indicated within parenthesis)
B is a single bond, a double bond or a triple bond
D is a chain with 1-10 carbon atoms, optionally interrupted by hetero atoms O, S, or N, the substituents on each carbon atom being H, alkyl groups, preferably lower alkyl groups with 1-5 carbon atoms, a carbonyl group, or a hydroxyl group
R_2 is a ring structure such as a phenyl group which is unsubstituted or has at least one substituent selected from C_1-C_5 alkyl groups, C_1-C_4 alkoxy groups, trifluoromethyl groups, C_1-C_3 aliphatic acylamino groups, nitro groups, halogen atoms, and phenyl group; or an aromatic heterocyclic group having 5-6 ring atoms, like thiazol, imidazole, pyrrolidine, thiopene and oxazole; or a cycloalkane or a cycloalkene with 3-7 carbon atoms in the ring, optionally substituted with lower alkyl groups with 1-5 carbon atoms,

for the preparation of an ophtalmological composition for the treatment of glaucoma or ocular hypertension.

2. Use according to claim 1 wherein D is a chain with 2-8 carbon atoms.

3. Us according to claim 1 wherein D is a chain with 2-5 carbon at ms.

4. Use according to claim 1 wherein D is a chain with 3 carbon atoms.

5. Use according to any of claims 1-4 wherein B is a single bond or a double bond and the substituent on C_{15} being a carbonyl group or (R)-OH or (S)-OH.

6. Use according to any of claims 1-5 wherein R_2 is a phenyl group which is unsubstituted or has at least one substituent selected from C_1-C_5 alkyl groups, C_1-C_4 alkoxy groups, trifluoromethyl groups, C_1-C_3 aliphatic acylamino groups, nitro groups, halogen atoms or a phenyl group.

7. Use according to claim 6 wherein the prostaglandin derivative is a 17-phenyl-18,19,20-trinor analogue.

8. Use according to claim 7 wherein the prostaglandin derivative is a 15-dehydro-17-phenyl-18,19,20-trinor analogue or a 13,14-dihydro-17-phenyl-18,19,20-trinor analogue.

9. Use according to claim 8 wherein the prostaglandin derivative is a 13,14-dihydro-17-phenyl-18,19,20-trinor derivative of PGA, PGE or PGF.

10. Use according to claim 8 wherein the prostaglandin is a 15-dehydro-17-phenyl-18,19,20-trinor derivative of PGA, PGE or PGF.

11. Use according to any of claims 1-10 wherein the prostaglandin derivative is an alkyl ester.

12. A method for treating glaucoma or ocular hypertension in a subject's eye which comprises contacting the surface of the eye with an effective intraocular pressure reducing amount of a therapeutically active

and physiologically acceptable derivativ of prostaglandin PGA, PGB, PGD, PGE or PGF in which the omega chain has the formula:

(13) (14) (15-24)

C B C - D - R_2

wherein

C is a carbon atom (the number is indicated within parenthesis)
B is a single bond, a double bond or a triple bond
D is a chain with 1-10 carbon atoms, optionally interrupted by hetero atoms O, S, or N, the substituents on each carbon atom being H, alkyl groups, preferably lower alkyl groups with 1-5 carbon atoms, a carbonyl group, or a hydroxyl group
R_2 is a ring structure such as a phenyl group which is unsubstituted or has at least one substituent selected from C_1-C_5 alkyl groups, C_1-C_4 alkoxy groups, trifluoromethyl groups, C_1-C_3 aliphatic acylamino groups, nitro groups, halogen atoms, and phenyl group; or an aromatic heterocyclic group having 5-6 ring atoms, like thiazol, imidazole, pyrrolidine, thiopene and oxazole; or a cycloalkane or a cycloalkene with 3-7 carbon atoms in the ring, optionally substituted with lower alkyl groups with 1-5 carbon atoms,

13. The method of claim 12 wherein D is chain with 2-8 carbon atoms.

14. The method of claim 12 wherein D is a chain with 2-5 carbon atoms.

15. The method of claim 12 wherein D is a chain with 3 carbon atoms.

16. The method of any of claims 12-15 wherein B is a single bond or a double bond and th substituent on C_{15} being a carbonyl group or (R)-OH or (S)-OH.

17. The method of any of claims 12-16 wherein R_2 is a phenyl group which is unsubstituted or has at least one substituent selected from C_1-C_5 alkyl groups; C_1-C_4 alkoxy groups, trifluoromethyl groups, C_1-C_3 aliphatic acylamino groups, nitro groups, halogen atoms or a phenyl group.

18. The method of claim 17 wherein the prostaglandin derivative is a 17-phenyl-18,19,20-trinor analogue.

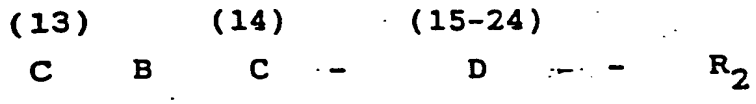
19. The method of claim 18 wherein the prostaglandin derivative is a 15-dehydro-17-phenyl-18,19,20-trinor analogue or a 13,14-dihydro-17-phenyl-18,19,20-trinor analogue.

20. The method of claim 19 wherein the prostaglandin derivative is a 15-dehydro-17-phenyl-18,19,20-trinor derivative of PGA, PGE or PGF.

21. The method of claim 20 wherein the prostaglandin derivative is a 13,14-dihydro-17-phenyl-18,19-20-trinor derivative of PGA, PGE or PGF.

22. The method of any of claims 12-21 wherein the prostaglandin derivative is an alkyl ester.

23. An ophthalmological composition for topical treatment of glaucoma or ocular hypertension which comprises an effective intraocular pressure reducing amount of a therapeutically active and physiologically acceptable prostaglandin derivative of PGA, PGB, PGD, PGE or PGF in which the omega chain has th formula:



wherein

C is a carbon atom (the number is indicated within parenthesis)
B is a single bond, a double bond or a triple bond
D is a chain with 1-10 carbon atoms, optionally interrupted by hetero atoms O, S, or N, the substituents on each carbon atom being H, alkyl groups, preferably lower alkyl groups with 1-5 carbon atoms, a carbonyl group, or a hydroxyl group
R_2 is a ring structure such as a phenyl group which is unsubstituted or has at least one substituent selected from C_1-C_5 alkyl groups, C_1-C_4 alkoxy groups, trifluoromethyl groups, C_1-C_3 aliphatic acylamino groups, nitro groups, halogen atoms, and phenyl group; or an aromatic heterocyclic group having 5-6 ring atoms, like thiazol, imidazole, pyrrolidine, thiopene and oxazole; or a cycloalkane or a cycloalkene with 3-7 carbon atoms in the ring, optionally substituted with lower alkyl groups with 1-5 carbon atoms,

in an ophthalmologically compatible carrier.